

REMARKS

Claims 18 and 41 have been cancelled. Claims 1, 14-17, 21, 24, 37, 40, 44 and 47-52 have been amended. The limitation of "between about 2800 cm⁻¹ and about 2400 cm⁻¹" has been added to all independent claims and its support can be found at, for example, at Page 20, line 30 to Page 21, line 1. Claims 1-17, 19-40, and 42-52 will be pending upon entrance of this amendment. No new matter has been added.

1. Claim Objections Have Been Obviated

Claims 51-52 stand objected because of informalities. Applicants have amended claims 47-52 by replacing "claims" with "Claim" in line 1 of each of these claims. Hence, the claim objections have been obviated.

2. Claim Rejections Under 35 U.S.C. § 112

Claims 15-16 and 47-50 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

A. Rejection of Claims 15-16

The Examiner suggests that claim 15 should have depended on claim 14 and claim 16 on claim 15, because neither claims 15-16 could depend on itself. Applicants agree with the Examiner and have amended claims 15-16 to correct the typographical error.

B. Rejection of Claims 47-50

The Office Action suggests that claims 47-50 should not be dependent from claim 14 because they would allegedly have limitations already in claims 15-16. Applicants respectfully disagree. While claims 47-50 would have overlapping scopes with claims 15 and/or 16; such scopes are not identical. Hence, claims 47-50 should not be rejected.

The Examiner also suggests replacing the word "analyte" with "sample". Applicants have complied.

In view of the above, Applicants submit that the 112 rejections are obviated or overcome.

3. Claim Rejections Under 35 U.S.C. § 103

Claims 1-52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,067,616 to Plester et al. ("Plester") in view of U.S. Patent Publication to Bachur, Jr. et al. ("Bachur").

While Applicants do not believe it is proper to combine the cited references, in the interest of expediting the allowance of the present application, Applicants have amended all independent claims by adding the limitation "between about 2800 cm^{-1} and about 2400 cm^{-1} ". Applicants reserve the right to prosecute the surrendered subject matter in a future application.

One of the three required criteria for establishing a prima facie case of obviousness is that the prior references combined must teach or suggest all the claim limitations. As amended, all pending claims now have the limitation "between about 2800 cm^{-1} and about 2400 cm^{-1} " which is neither taught nor suggested by either Plester or Bachur. A wave number of 2800 cm^{-1} corresponds to a wavelength of 3.571 micrometer (or 3571 nm); and a wave number of 2400 cm^{-1} corresponds to a wavelength of 4.167 micrometer (or 4167 nm).

The primary reference Plester discloses a long list of methods of detection (Col. 12, line 65 to Col. 16, line 14): (1) emission spectroscopy; (2) multiparameter luminescence analysis; (3) infrared spectrophotometry; (4) near infrared region (1100 to 2500 nm); (5) ultraviolet/Visible (colorimetric) absorption spectroscopy (190 to 700 nm); (6) Raman spectroscopy; (7) other light measurements; (8) flame ionization detectors; (9) X-ray fluorescence; (10) laser-induced breakdown spectroscopy; (11), electrical conductivity; (12) gas chromatography; (13) mass spectroscopy; and (14) nuclear magnetic resonance. It is interesting to note that spectroscopy in the mid-infrared to far-infrared region (e.g., between about 2800 cm^{-1} and about 2400 cm^{-1}) is not mentioned in this long list. One very possible reason such omission is that silica glass vials not ideal optical cells for spectrophotometric analysis in the mid- to far infrared regions because they have very low spectral transmission response and hence a very weak analytical signal. Hence, Plester not only fails to disclose a limitation of the claimed invention, but also teaches away from the use of mid- to far- infrared spectroscopy by eliminating it from a long list of methods of detection.

The secondary reference Bachur does not cure the deficiency of Plester. Despite listing many wavelength values, (e.g., 2.004, 1.997, 1.570, 1.650, 7.28 micrometers, Col. 5 of Bachur), none of the listed wavelengths falls inside the range between about 3.571 to about 4.167 micrometer (corresponds to wave number between about 2800 cm^{-1} to about 2400 cm^{-1}). Hence, the combination of Plester and Bachur does not teach or suggest the present invention.

In view of the above, Applicants submit that the 103 rejection are obviated or overcome.


4. Miscellaneous Amendments

Applicants also made miscellaneous non-narrowing claim amendments to put the claims in better condition for allowance. For example, in claims 1, 14, 17 24, 37, 40, items 1, 2, 3, 4, 5, 6, and/or 7 have been replaced by (a), (b), (c), (d), (e), (f), and/or (g).

In view of the foregoing, Applicants submit that the application is now in condition for allowance and early and favorable action is earnestly sought. Should any issues remain, the Examiner is invited to telephone the undersigned at (203)677-5644.

Respectfully submitted,

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